BROWN Vandever VANDAMENT & SCHMITT

NAVAJO SUPERFUND OFFICE

NAVAJO - BROWN VANDEVER URNAIUM MINE

CONFIDENTIAL DOCUMENT

JUNE '90

P. MOLLOY

LEONARD HASKIE
INTERIM PRESIDENT
NAVAJO NATION

THE NAVAJO NATION

IRVING BILLY
INTERIM VICE PRESIDENT
NAVAJO NATION

NSO-90-61

June 5, 1990

Mark Satterwhite
Superfund Indian Coordinator
U.S. EPA Region VI
1445 Ross Avenue
Dallas, Texas 75202

Dear Mr. Satterwhite:

Enclosed please find the Pre-Score Analysis HRS Scoresheet for the Brown Vandever Uranium Mine near Bluewater, New Mexico.

If you should have any questions or comments, do not hesitate to contact myself or Patrick Molloy, the Health Physicist who prepared the package. Thank you for your time.

Sincerely,

Clara Bia, Director
Navajo Superfund Program

Enclosures

Facility Name: NAVAJO - BROWN VANDEVER URANIUM MINE

Location: BLUEWATER, NEW MEXICO

EPA Region: VI

Person(s) In Charge of the Facility: NAVAJO NATION/MR. BROWN VANDEVER

P. O. BOX 308 (NN)

WINDOW ROCK, AZ 86515

Name of Reviewer: PATRICK MOLLOY Date: JUNE,1990

General Description of the facility:
(For example landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

AN ABONDONED URANIUM MINE WITH INCLINED ADITS, AN ALMOST VERTICAL SHAFT, AND WASTE PILES: APPROXIMATELY 65 ON SITE RESIDENTS INCLUDING SMALL CHILDREN. WASTE PILES SUSPECTED OF CONTAINING RADIOSPECIES Bi,Po, Pb, Ra, Th AND HEAVY METALS As, Ba, Cr, Mg, Mn, Pb, Sr, Ti, V,Se. POSSIBLE CONTAMINATION OF SURFACE WATER AND SOIL SEDIMENTS, GROUND WATER AND AIR. FURTHER ASSESSMENT OF SITE BY SAMPLE ANALYSES TO DETERMINE CONTAMINANT TRANSPORT/MIGRATION. WHOLE BODY COUNTS FOR SITE RESIDENTS SHOULD BE PERFORMED.

Scores: S_M = 15.36 (S_{gw} = 26.56 S_{sw} = 0.93 S_a = 0.0)

S_{FE} =

S_{DC} = "EXTANT"

FIGURE 1
HRS COVER SHEET

Preliminary S_M WORKSHEET

	S	S^2
Groundwater Route Score (Sgv)	26.56	705.43
Surface Water Route Score (Ssv)	.93	.87
Air Route Score (Sa)	0.0	0.0
$Sgv^2 + Ssv^2 + Sa^2$		706.3
$(Sgv^2 + Ssv^2 + Sa^2)^{1/2}$		26.58
$(Sgv^2 + Ssv^2 + Sa^2)^{1/2} / 1.73 = S_M =$ 15.36		

Projected S_M WORKSHEET

	S	S^2
Groundwater Route Score (Sgv)	56.91	3238.75
Surface Water Route Score (Ssv)	3.496	12.22
Air Route Score (Sa)	53.08	2817.49
$Sgv^2 + Ssv^2 + Sa^2$		6068.46
$(Sgv^2 + Ssv^2 + Sa^2)^{1/2}$		77.9
$(Sgv^2 + Ssv^2 + Sa^2)^{1/2} / 1.73 = S_M =$ 45.03		

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****** GROUND WATER ROUTE WORKSHEET ******

	Preliminary	Ref.	Projected	Ref.
1 OBSERVED RELEASE	0	-	45	-
2 ROUTE CHARACTERISTICS				
DEPTH TO AQUIFER OF CONCERN (x2)	2	5,19		
NET PRECIPITATION	0	5,12		
PERMEABILITY OF UNSATURATED ZONE	3	19,30,32,34		
PHYSICAL STATE	2	3,7		
ROUTE CHARACT. SCORE =	7	-		
3 CONTAINMENT	3	3,33		
4 WASTE CHARACTERISTICS:				
TOXICITY/PERSISTENCE	18	22,23	18	-
HAZARDOUS WASTE QUANTITY	7	3,4	7	-
WASTE CHARACT. SCORE =	25	-	25	-
5 TARGETS:				
GROUNDWATER USE (x3)	9	3,21	9	-
DISTANCE TO NEAREST WELL /POPULATION SERVED		3,7,14,19	20	-
TOTAL TARGETS SCORE =	29	-	29	
GROUNDWATER ROUTE SCORE =	26.56	-	56.91	-

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***** SURFACE WATER ROUTE WORKSHEET ****

	PRELIMINARY	REF.	PROJECTED	REF.
1 OBSERVED RELEASE	0	-	45	-
2 ROUTE CHARACTERISTICS:				
FACILITY SLOPE AND INTERVENING TERRAIN	1	3,7,33		
1-yr, 24-hr. RAINFALL	1	13		
DISTANCE TO NEAREST SURFACE WATER (x2)	0	3,7		
PHYSICAL STATE	2	3,7		
ROUTE CHARACT. SCORE =	4			
3 CONTAINMENT	3	3,33		
4 WASTE CHARACTERISTICS:				
TOXICITY/PERSISTENCE	18	22,23	18	-
HAZ. WASTE QUANTITY	7	3,4	7	-
WASTE CHARACT. SCORE =	25	-	25	-
5 TARGETS:				
SURFACE WATER USE (x3)	0	3,5	0	-
DISTANCE TO A SENSITIVE ENVIRONMENT (x2)	2	9	2	-
POPULATION SERVED/ DISTANCE TO DOWNSTREAM WATER INTAKE	0	3,5,16,20	0	-
TOTAL TARGETS SCORE =	2	-	2	-
SURFACE WATER ROUTE SCORE =	.93	-	3.496	-

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***** AIR ROUTE WORK SHEET ****

	Preliminary	Ref.	Projected	Ref.
1 OBSERVED RELEASE	0	-	45	-
DATE AND LOCATION:				
2 WASTE CHARACTERISTICS:				
REACTIVITY AND INCOMPATIBILITY	2	22,23,33	2	-
TOXICITY (x3)	9	22,23	9	-
HAZARDOUS WASTE QUANTITY	7	3,4	7	-
WASTE CHARACT. SCORE =	18	-	18	-
3 TARGETS:				
POP. WITHIN 4 MILES	18	3,4,21	18	-
DISTANCE TO SENSITIVE ENVIRONMENT (x2)	2	7,9	2	-
LAND USE	3	3	3	-
TOTAL TARGETS SCORE =	23	-	23	-
AIR ROUTE SCORE -	0	-	53.08	-